

REMARKS

Claims 1-10 are pending. By this Amendment, the title and claims 1, 2, 4 and 6-9 have been amended.

A Restriction Requirement was required and Applicants elected Group I, claims 1-7. Page 2 of the Office Action asserts that (1) the election was made without traverse and (2) Applicants did not distinctly and specifically point out the supposed errors in the Restriction Requirement. This is not correct because Applicants did distinctly and specifically point out the errors in the Restriction Requirement, with traverse.

As stated in the Response to the Restriction Requirement, the subject matter of all claims is sufficiently related that a thorough search for the subject matter of any one group of claims would encompass a search for the subject matter of the remaining claims. As stated in MPEP §803, the second criteria for a proper requirement for restriction is that there must be a serious burden on the Examiner to review both groups of claims. Applicants herein provide the following comments in order to further explain why the claims are sufficiently related and why an undue burden is not being placed on the Examiner.

A serious burden is not being placed on the Examiner to review both groups of claims because the claims are sufficiently related that the search for the subject matter of claims 1-7 would encompass the search for the subject matter of claims 8-10. The Office Action asserts that the claims are not sufficiently related because the product as claimed can be made a materially different process. This is not correct because claim 8 is the method equivalent of claim 1 with the difference being that claim 1 recites structure and claim 8 recites forming the structure of claim 1. For example, claim 1 recites "an antiferromagnetic layer" and claim 8 recites "forming an antiferromagnetic layer." The antiferromagnetic layer of claim 1 cannot be made by a process that is materially different from "forming an antiferromagnetic layer",

as recited in claim 8. Accordingly, the product of claim 1 cannot be made by another and materially different process and the claims are sufficiently related.

The claims are sufficiently related that a search for the subject matter of claim 1 would encompass the search for the subject matter of claim 8. In other words, a search for the process in claim 8 is required because the resulting product would include all of the features of claim 1. An undue burden is thus not being placed on the Examiner to review both groups of claims because the Examiner must search for the process of claim 8 in order to determine if claim 1 is anticipated or rendered obvious by any prior art.

It is respectfully requested that the Restriction Requirement be withdrawn and that claims 8-10 be rejoined and considered.

An Election of Species was also required and Applicants elected Figs. 1-10. Claims 1-3 and 5-11 read on Figs. 1-10 and claim 1 remains generic to claim 4. Accordingly, Applicants request rejoinder of claim 4 when claim 1 is found to be allowable. See MPEP 821.04.

The title was objected to based on an informality. By this Amendment, the title has been amended responsive to the objection. It is respectfully requested that the objection be withdrawn.

Claims 1-3, 6 and 7 were rejected under 35 U.S.C. §102(e) over Carey et al. (Carey), U.S. Patent No. 6,836,392. Applicants also assume that claim 5 was rejected over Carey. The rejection is respectfully traversed.

Carey fails to disclose a thin-film magnetic head with a first electrode layer of a pair of electrode layers being connected to a pinned layer and a second electrode layer of the pair of electrode layers being placed above a free layer on a side opposite the pinned layer, as recited in claim 1 and as similarly recited in claims 6 and 7.

Carey discloses an MR sensor 120 with a free layer 127, a conductive layer 126 and a pinned structure 129 (Fig. 2). Although Carey's Fig. 2 fails to disclose upper leads 112, the leads 112 of Carey's Fig. 1 (which are attached to a side of the free layer 105) would similarly attach to the free layer 127 in Fig. 2. The leads 112 would thus be placed to the side of (and not above) the free layer 127 and not on a side opposite the pinned structure 129.

Accordingly, Carey fails to disclose an electrode layer that is placed above the free layer 127 on a side opposite the pinned structure 129. Carey thus suffers deficiencies in that the contact area between the upper leads 112 and the free layer 127 is relatively small, electric current density is higher and a larger amount of heat is generated. Damage will thus likely occur in Carey and the S/N ratio is deteriorated because the heat makes noise. Applicants overcome these deficiencies by placing the second electrode layer above the free layer on a side opposite the pinned layer, as recited in claims 1, 6 and 7.

Carey also fails to disclose a first electrode layer connected to a pinned layer being in contact with a track-width side face of the second ferromagnetic layer but not in contact with a track-width side face of the first ferromagnetic layer, as recited in claim 2.

Fig. 2 of Carey fails to disclose leads 112. Fig. 1 of Carey discloses lower leads 112 in contact with a pinned layer 103. Carey fails to provide any disclosure with regard to having the leads 112 contact the reference layer 125 and not the pinned layer 123 of the pinned structure 129 (which is used to replace the pinned layer 103 of Fig. 1).

Carey also fails to disclose a face of a second ferromagnetic layer opposing a first ferromagnetic layer as having an area smaller than that of a face of a first ferromagnetic layer opposing the second ferromagnetic layer, as recited in claim 3.

Carey's reference layer 125 and pinned layer 123 have the same dimensions (Fig. 2). Carey fails to provide any disclosure with regard to one face having an area smaller than another face.

It is respectfully requested that the rejection be withdrawn.

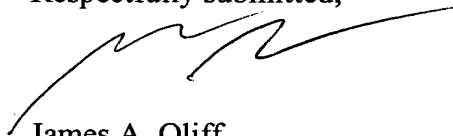
Claim 4 was rejected under 35 U.S.C. §103(a) over Carey. The rejection is respectfully traversed.

As discussed above, Carey fails to disclose all of the features recited in claim 1. Carey also fails to suggest the additional features recited in claim 4. It is respectfully requested that the rejection be withdrawn.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:
Petition for Extension of Time

Date: November 28, 2005

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